

Excellent Education in preschool and its effects on cognitively excellent pupils

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- Research Questions
- Excellent Education
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Mismatch between regular education and cognitively excellent pupils' needs

Play/learning orientation in preschools → cognitive, social, emotional, & motivation problems

Learning processes (Mooij, 1992):

- a higher initial level
 - larger "learning steps"
 - more abstract learning
 - more self-structuring
 - longer periods of concentration,
 - less repetition
 - qualitatively richer and faster guidance by the teacher
 - willingness and abilities to work rather independently
- Strong verbal and mathematical skills

Not supported in school



Lack of challenging tasks

- Academic and social underachievement
- Motivation problems
- Difficult or abnormal behaviour
- Unnoticed “adapted” behaviour



Explanations of mismatch

Learning processes influenced by:

- Person \leftrightarrow Context (Magnusson & Allen, 1983)

Important person factor:

- Developmental age (Mooij, 2000): at age 4: ranging from 2 to 8 years

School encouragement:

- Based on calendar age

→ Less motivation, problems of underachievement



Early years crucial

Several initiatives later in school career, however:

- Early years crucial for optimal school career

This PhD project: Excellent Education

- Curriculum with level-appropriate play and learning material.
- Developed and implemented in regular mixed-ability schools
- Examining its effects on development of cognitively excellent pupils



Research Questions

1. In what ways can underachievement of cognitively excellent pupils be explained and how could this underachievement be prevented by 'Excellent Education'?
2. In what ways can prevention of underachievement resp. Excellent Education be realised in preschool and the first years of primary school?
3. Does Excellent Education - as compared to regular education - positively affect cognitively excellent pupils' cognitive, social, emotional, and motivation development and, if yes, in what ways?
4. Does duration of attending Excellent Education affect cognitively excellent pupils' cognitive, social, emotional, and motivation development and, if yes, in what ways?



Intervention: Excellent Education

School innovation based on competence based education (Mooij, 2008; 2009):

- Screening of entry levels → identification
- Learning at appropriate starting levels
- Curriculum structured in criterion valid learning blocks & continuous learning paths
- Evaluation based on achievements/criteria

Essential: match between play/learning activities and level determinations

Support: preparation/implementation in schools



Research Design

Year	2011	2011/2012	2012	2012/2013	2013
Month	9	10/6	6	9/6	6
Activity	O1	Intervention	O2	Intervention	O3
Sg1	X	X	X	X	X
Sg2	X	--	X	X	X

- 41 primary schools
- Similar orientation to realise Excellent Education
- Random assignment
- Sg2 control group first year



Variables

- Multilevel: pupil, class, school
- Detecting school innovation

Level	Variables	Example
Pupil	Cognitive	Language level
	Social-emotional	Social behaviour
	Family	Parental involvement
Class	Teaching characteristics	Grouping variety
School	Estimated teaching characteristics	Curriculum preschool



Screening of entry levels

- 1) general cognitive abilities,
- 2) language proficiency,
- 3) pre-arithmetic performance,
- 4) social interaction/communication,
- 5) emotional-expressive abilities,
- 6) sensory-motor behaviour, and
- 7) expected educational behaviour.

By parents and teacher


Mooij & Smeets, 1997




Beginkenmerken door leerkracht


Geschat taalniveau

In vergelijking met leeftijdgenoten is een kenmerk van het kind


 naar betekenis van woorden vragen

 moeilijke woorden willen begrijpen

 in goede zinnen praten


 interesse in lezen

 leest het?

 interesse in letters/schrijven

 schrijft het?

minder 

- kies - 

- kies -
minder
iets minder
even veel
iets meer
meer

- kies - 

alles beantwoord, volgende blad

Participants & definition of cognitively excellent pupils

Excellent Education: for cognitively excellent pupils entering the school only

Determination cognitively excellent pupils:

1. High scores on cognitive scales screening
2. High scores on standardised language/math test on age-norm
3. Moderate to high scores on language/math test on above-age norm
4. High scores on personality test for intelligence



Methods and design research question 1

1. In what ways can underachievement of cognitively excellent pupils be explained and how could this underachievement be prevented by 'Excellent Education'?

Theoretical model to explain learning processes (article 1):

- Individual level
- Class level
- School level

Literature: giftedness, gifted education, education for cognitively excellent pupils, learning of gifted and cognitively excellent pupils.



Methods and design research question 2

2. In what ways can prevention of underachievement resp. Excellent Education be realised in preschool and the first years of primary school?

Subquestions (article 2):

- How can teachers design and use criterion-based learning?
- How can teachers link results from the screening of entry characteristics to the criterion-based play and learning processes in the school?
- How can teachers combine the learning and grouping of cognitively excellent pupils with the learning and grouping of the other pupils?

Meetings with schools for support and guidance:

- Logbooks
- Systematic registrations of visits



Methods and design research question 3 and 4

3. Does Excellent Education - as compared to regular education - positively affect cognitively excellent pupils' cognitive, social, emotional, and motivation development and, if yes, in what ways?

Comparing Sg1 & Sg2: O2-O1 (article 3)

4. Does duration of attending Excellent Education affect cognitively excellent pupils' cognitive, social, emotional, and motivation development and, if yes, in what ways?

Comparing Sg1 & Sg2: O3-O2 vs O2-O1 (article 4)



Scientific and practical importance and originality

- Timing of intervention (Colangelo et al., 2004; Walsh et al., 2010)
- Not solving but preventing problems of underachievement
- Hardly any methodologically sound research into effectiveness
- Embed in adequate theory and corresponding multilevel model



Expected scientific output

- 4 research articles
- Articles in professional journals
- Conference presentations
- Dissertation





Thank you for your attention!

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